

# Website Creation and Management at CERN

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# CERN's web presence

## Internal and external audience

(day-to-day operations, press releases, announcements, collaboration, etc.)

## Different owners and users

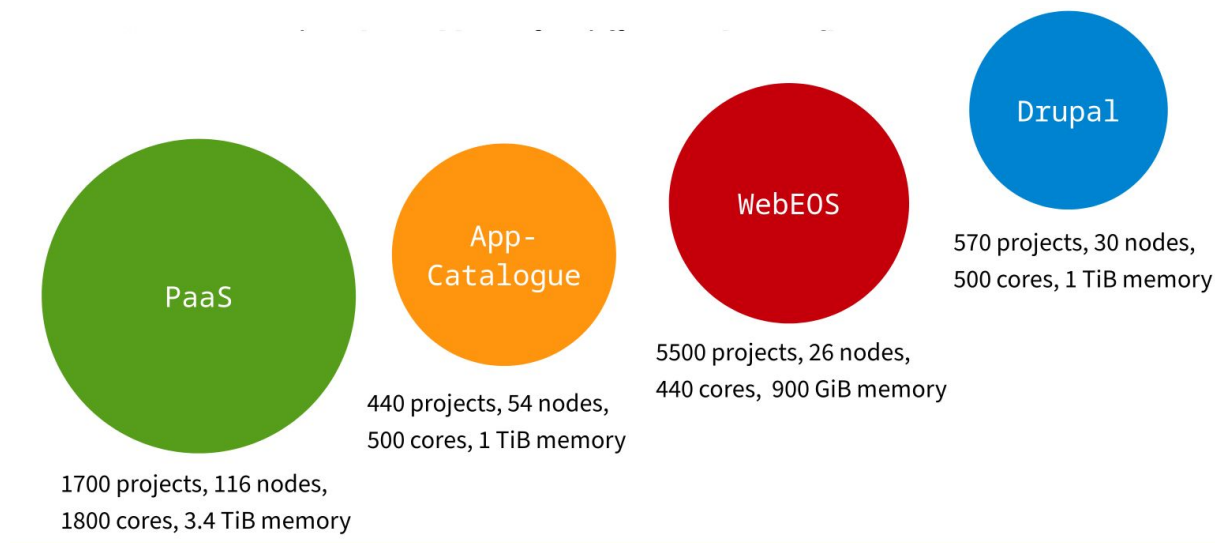
(each website has unique requirements, audience(s), experience, traffic, and resources)



# How do we manage it?

**Centralised infrastructure**  
(run latest versions, apply security patches)

**Standardised configuration**  
(provisioning, backups, service integrations, authentication, etc.)



# Web Services Portal

**Streamlines access to services to create and manage web applications**

**Use services provided by the IT infrastructure.**

## Web Tools and Services

Find applications and services suitable for your use case.



### Web Content Management

Create fully-fledged projects and organizational sites with content management and WSIWG editor.



### Documentation

Create structured documentation for a service, build your project's knowledge base, work on publications.



### Communication

Allow your community to discuss specific topics and get their answers quickly. Prepare surveys, send newsletters and alerts.



### Web Application & Site Hosting

Expose your self-made website and share content with others.



### Software development

Get support for the whole software lifecycle: issue tracking, version control, continuous integration and deployment, repository management, and others.



### Monitoring Solutions

Add analytics to your website, get insight into your application performance and identify operational problems with no hassle.

# Monitoring Solutions

## Sentry

- Real-time application monitoring and issue identification



## Grafana

- Interactive dashboards for data visualization and analytics
- Ideal for monitoring application performance



## Matomo

- Web analytics for detailed insights into website performance
- Supports GDPR compliance and data privacy



# Web Content Management

## Drupal and WordPress

- Create organizational sites using defined project templates
- Ideal for teams needing structured content management solutions



## Sharepoint Online

- Projects needing more advanced features for content sharing, collaboration, document management and workflows
- GDPR compliance



# Documentation Tools

## GitLab Pages (MkDocs)

- Documentation generator for software teams
- Recommended for publishing software documentation



## CodiMD - Online Text Editor

- Collaborative note taking in real time
- Meeting minutes and drafts of documentation



## Confluence

- Content collaboration and management workspace
- Ideal for teams needing a shared knowledge environment



# Software Development Tools

## GitLab

- Source code control, versioning, and continuous integration



## Jira

- Issue tracking and bug management
- Ideal for project teams managing complex workflows





# Communication Tools

## Discourse

- Forum platform for community discussions and problem-solving
- Recommended for communities to exchange solutions



## Microsoft Forms

- Lightweight survey tool for quick feedback collection



# Advanced Software Development Tools

## Nexus

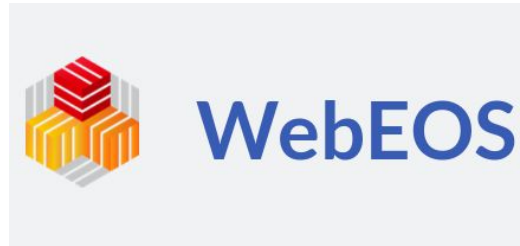
- **Artifact repository manager for binaries and build artifacts**
- **Essential for managing software dependencies**



## Jenkins

- **Advanced continuous integration workflows**
- **Recommended for teams with complex CI/CD needs**





**Web Content Management**

**Web Application & Site  
Hosting**

**Monitoring**

# Website Hosting

Using WebEOS

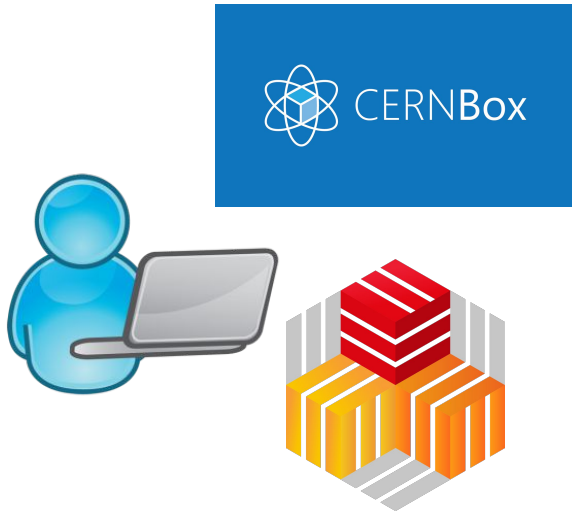


## WebEOS

Host lightweight  
official and personal  
websites using EOS

Ideal for publishing  
static content and  
simple dynamic  
content online

# Workflow



Served From

Site URL:

EOS Path:

Version:  [Learn more](#)

Site Access

Guest Access:

Site is accessible only to user groups defined explicitly in the Application Portal. These are set by default to all CERN account holders and EduGAIN users, but can be easily changed.

[Learn More](#)

Use .htaccess files:

Allowed web crawlers:

Advanced

Directory Browsing: [See how to configure](#)

CGI Execution: [See how to configure](#)

Advanced Access Control: [See how to configure](#)

Troubleshooting: [View Site Logs](#)

Archive Site:

[All about WebEOS site configuration](#)

Store site content on EOS

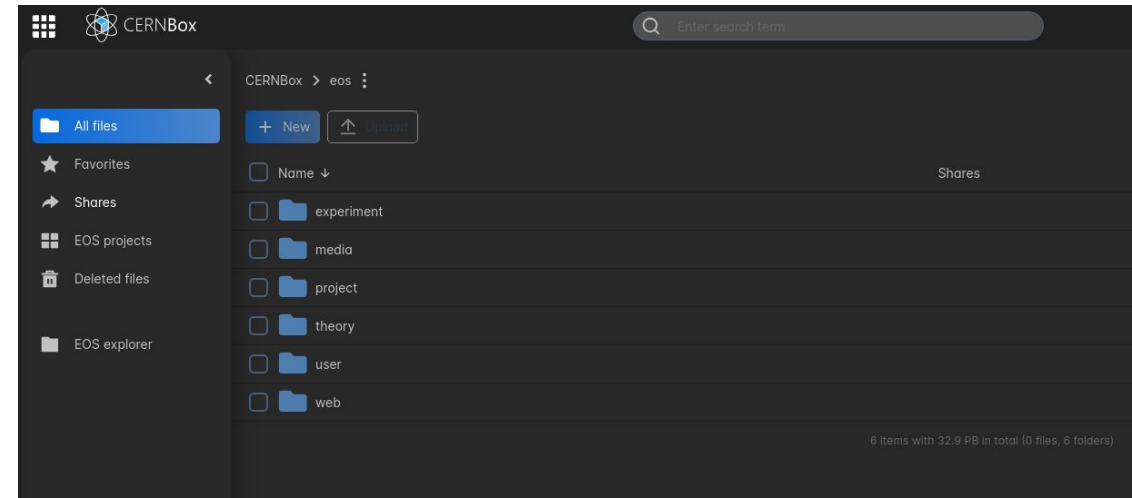
Create site on Web Services Portal

Configure site and define Access Control

# Store your static code and site content on EOS

- How do I access EOS?

- Lxplus
- CERNBox



Filesystem	Size	Used	Avail	Use%	Mounted on
/dev/mapper/Vol...	83G	47G	32G	60%	/
tmpfs	16G	2.5M	16G	1%	/dev/shm
/dev/vda1	398M	107M	271M	29%	/boot
/dev/vdb	159G	111G	40G	74%	/tmp
/dev/vdb	159G	111G	40G	74%	/var/tmp
AFS	9.3G	0	9.3G	0%	/afs
sssd	315M	56M	259M	18%	/var/lib/sss/db
<b>eosuser</b>	<b>973T</b>	<b>589T</b>	<b>385T</b>	<b>61%</b>	<b>/eos/user</b>
cvmfs2	32G	22G	9.9G	69%	/cvmfs/atlas.cern.ch
cvmfs2	32G	22G	9.9G	69%	/cvmfs/cms.cern.ch
cvmfs2	32G	22G	9.9G	69%	/cvmfs/sft.cern.ch
cvmfs2	32G	22G	9.9G	69%	/cvmfs/cvmfs-config.cern.ch

# Store your website code and content on EOS

## EOS Instances

- Official sites: EOSPROJECT or dedicated experiment instances (ATLAS, ALICE, CMS, LHCb)
- Personal and Test sites: EOSUSER instance

## Defining the EOS Path

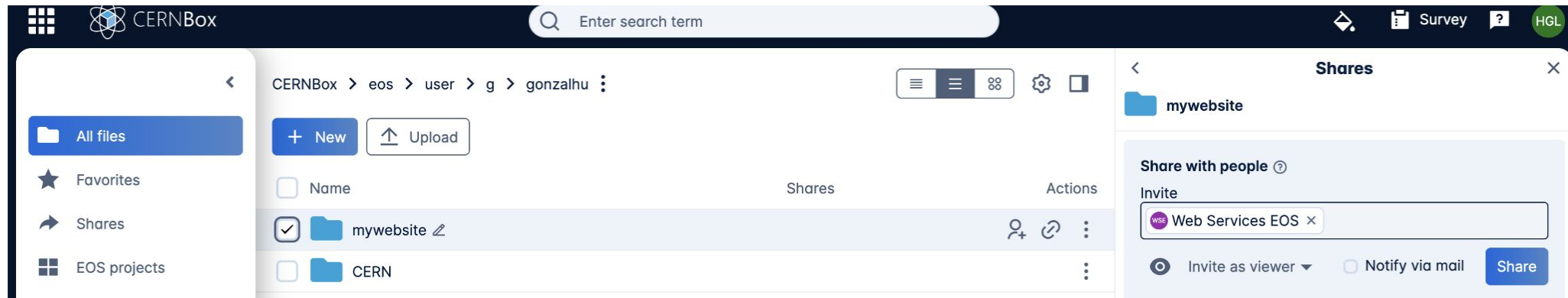
Typical paths:

- /eos/project/<initial>/<projectname>/www for official projects
- /eos/user/<initial>/username/www for personal websites
- Path must lead to the directory containing the index.html

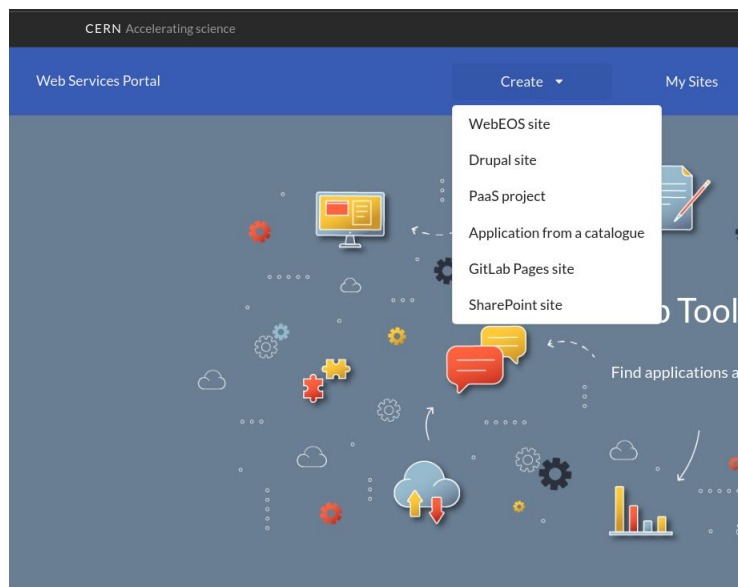


# Granting Access to Web Servers

- **Share EOS folder with account wwweos**
  - Through CERNBox as Viewer
  - Use EOS CLI on Ixplus



# Create your site



## Creating a WebEOS site

You're minutes away from getting your site up and running.

1. WebEOS sites have their content stored on EOS. Share the EOS location of your choice with user a : `wwweos` via the cernbox web interface.

See how: [for personal sites](#) , [for project sites](#)

2. Create `index.html` file in the EOS location. [See example](#)

3. Fill in the form below and let us do the magic

[Our recommendations for choosing a site name and category](#)

Official - reassigned when owner leaves	▼
Site name	.web.cern.ch ▼
Administrator group for the site, e.g. my-group	🔍
Setting administrator group for Official sites is strongly recommended. If you do not set an admin group now, please make sure to set it at the earliest opportunity.	
Site description	
Path to site content on EOS folder, e.g. /eos/project/www	

## Define

- Site category
- Site URL
- Admin group

Category*	Test - deleted 6 months after creation ▼
Description*	Official - reassigned when owner leaves
	Personal - deleted when owner leaves
	Test - deleted 6 months after creation

# Configure your site

### Served From

Site URL

EOS Path

Version  [Learn more](#)

### Site Access

Guest Access

Site is accessible only to user groups defined explicitly in the [Application Portal](#). These are set by default to all CERN account holders and EduGAIN users, but can be easily changed.

[Learn More](#)

Use .htaccess files

Allowed web crawlers

### Advanced

Directory Browsing [See how to configure](#)

CGI Execution [See how to configure](#)

Advanced Access Control [See how to configure](#)

Troubleshooting [View Site Logs](#)

Archive Site

[All about WebEOS site configuration](#)

# Access Control

> Applications > My Application

Application: Web frameworks site test-site-csc (webeos)

Application details SSO Registration Roles Group memberships

	Details
Application Identifier	webframeworks-webeos-test-site-csc
Name	Web frameworks site test-site-csc (webeos)
Home Page	https://webservices-portal.web.cern.ch/webeos/test-site-csc
Description	Dummy project for testing
Owner	Vasvi Sharma (vasvi) <a href="#">Edit</a>
Administrators	vasvi-test-wordpress-roles
Managed By ?	authz-operator-okd4-prod (appauthz-operator-okd4-prod)
Category	Test
Creation Date	2024/11/03 16:11

[Edit](#) [Delete](#)

Applications managed by other applications cannot be deleted! Please proceed to the site or service where this application is managed in order to delete it.

```
.htaccess
1
2 #DON'T SHOW DIRECTORY LISTINGS
3 Options -Indexes
4
5 #FOLLOW SYMBOLIC LINKS
6 Options +FollowSymLinks
7
8 #SET DEFAULT HANDLER
9 DirectoryIndex index.php index.html index.htm
10
11 RewriteEngine on
12
```


## Application Portal

- Site-level access control
- Configured entirely through UI

## .htaccess files

- Directory level access control
- Configured using htaccess directives

# Global access settings

 Configuration of test-site-csc

General		Website management	
Name	test-site-csc	Owner*	<input type="text" value="vasvi"/>
Created on	11/3/2024, 4:42:06 PM	Administrator group	<input type="text" value="Administrator group for the site, e.g. my-group"/>
Category*	<input type="text" value="Test - deleted 6 months after creation"/>	<a href="#">Add users to the admin group via the Groups Portal</a>	
Description*	<input type="text" value="Dummy project for testing"/>	<a href="#">Manage roles via the Application Portal</a>	
<a href="#">All about WebEOS site configuration</a>			
		<input type="button" value="Save"/>	<input type="button" value="Delete"/>

Enable this if you want to allow guest access

## Site Access

Guest Access



Site is accessible to unauthenticated users; you may restrict access to some parts of the site by adding rules in corresponding .htaccess files

[Learn More](#)

Use .htaccess files






Allowed web crawlers

# Roles

> Applications > My Application

## Application: webEOS Test

Application details SSO Registration **Roles** Group memberships

Name	Role Identifier	Description	Required?	Multifactor?	Apply to all users?	
Default Allowed Users	default-role	Users must be from CERN or eduGAIN to have access	✓		✓	  

[+ Add Role](#)

## + Edit Role: default-role

Role Name

Default Allowed Users

Description

Users must be from CERN or eduGAIN to have access

This role is required to access my application

If checked, users without this role will not be able to authenticate to your application.

Multifactor required

If checked, users must authenticate with Multifactor Authentication to be granted this role.

This role applies to all authenticated users

If checked, this role will applied to all authenticated users, regardless of them belonging to any group or not. Use this option to define a role that is based only on the value of the Minimum Level of Assurance and/or usage of Multifactor authentication.

Minimum Level Of Assurance: CERN (highest)

Submit

Roles

Role settings

# Assign e-groups to roles

## + Edit Role: default-role

**Role Name**  
Default Allowed Users

**Description**  
Users must be from CERN or eduGAIN to have access

**This role is required to access my application**  
If checked, users without this role will not be able to authenticate to your application.

**Multifactor required**  
If checked, users must authenticate with Multifactor Authentication to be granted this role.

**This role applies to all authenticated users**  
If checked, this role will be applied to all authenticated users, regardless of them belonging to any group or not. Use this option to define a role that is based only on the value of the Minimum Level of Assurance and/or usage of Multifactor authentication.

Minimum Level Of Assurance: **EduGain with SIRTIFI**

**Submit**

> Applications > My Application > My Role

## Role: Default Allowed Users

	Details
<b>Name</b>	Default Allowed Us...
<b>Role Identifier</b>	default-role
<b>Minimum Assurance</b>	EduGain with SIRTIFI
<b>Multifactor</b>	
<b>Required</b>	✓
<b>Apply to all users</b>	

## Linked Groups:

Identifier	Display name	Description
You do not have any linked groups yet!		
Search by group identifier: <input type="text"/>		

# .htaccess for Access Control

- Granular access control
- Default state: .htaccess files not processed

Site Access

Guest Access

Site is accessible only to user groups defined explicitly in the [Application Portal](#). These are set by default to all CERN account holders and EduGAIN users, but can be easily changed.

[Learn More](#)

Use .htaccess files

Allowed web crawlers



# Using .htaccess

- **Directory-level access control**
- **Enabling/disabling authentication per directory**

```
AuthType openid-connect  
Require claim cern_roles:<role_identifier>
```

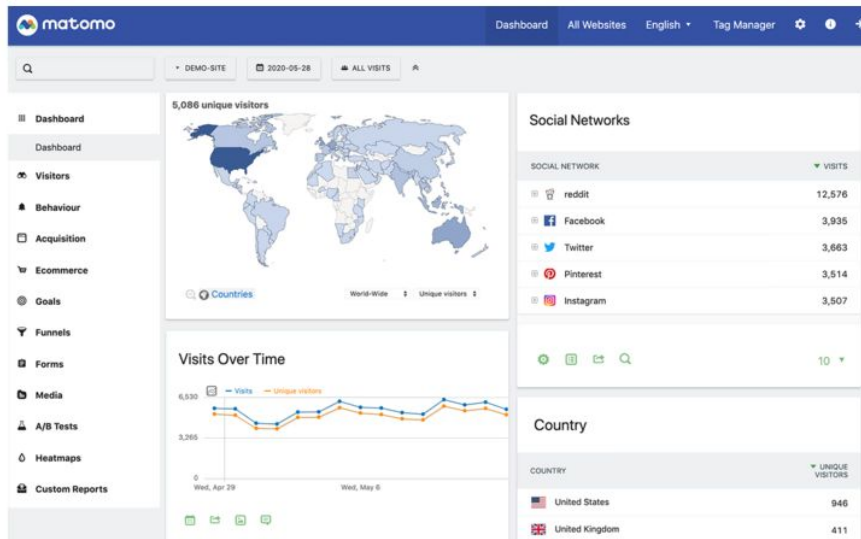
## Access scenarios

- **Site accessible to unauthenticated users**
  - **Site accessible to specific groups**
  - **Root accessible to unauthenticated users, directories protected**
  - **Intranet visibility**
- 
- **Combine directives with “Require All” and “Require Any”**

```
AuthType None  
Require all granted
```

# Monitoring

## Web Analytics



- Detailed reports on website and visitor behavior
- GDPR compliance and user opt-out options
- Anonymization of tracked data

# Using Matomo for your site

### Site Access

**Guest Access**

Site is accessible only to user groups defined explicitly in the Application Portal. These are set by default to all CERN account holders and EduGAIN users, but can be easily changed.

[Learn More](#)

**Use .htaccess files**

**Allowed web crawlers**

**Advanced**

**Directory Browsing** [See how to configure](#)

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**Advanced Access Control** [See how to configure](#)

**Troubleshooting** [View Site Logs](#)

**Archive Site**

[All about WebEOS site configuration](#)

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### Web Analytics

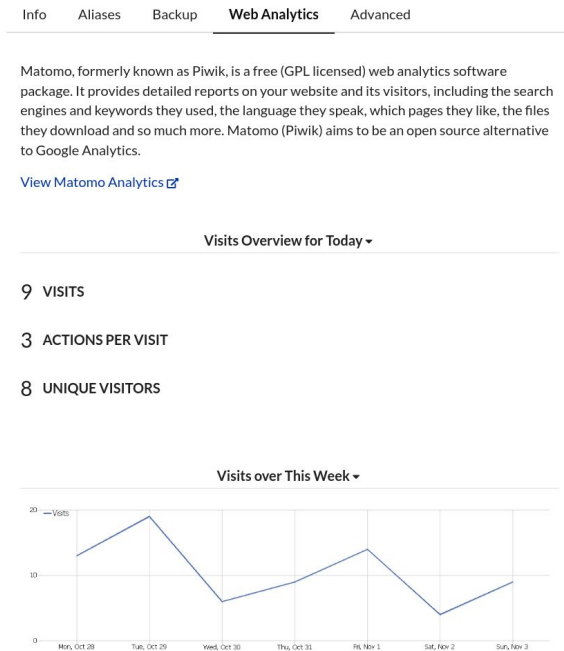
Matomo, formerly known as Piwik, is a free (GPL licensed) web analytics software package. It provides detailed reports on your website and its visitors, including the search engines and keywords they used, the language they speak, which pages they like, the files they download and so much more. Matomo (Piwik) aims to be an open source alternative to Google Analytics.

```
<!-- Matomo -->
<script type="text/javascript">
  var _paq = window._paq = window._paq || [];
  /* tracker methods like "setCustomDimension" should be called before "trackPageView" */
  _paq.push(['trackPageView']);
  _paq.push(['enableLinkTracking']);
  (function() {
    var u="https://webanalytics.web.cern.ch/";
    _paq.push(['setTrackerUrl', u+'matomo.php']);
    _paq.push(['setSiteId', '1']);
    var d=document, g=d.createElement('script'), s=d.getElementsByTagName('script')[0];
    g.type='text/javascript'; g.async=true; g.src=u+'matomo.js'; s.parentNode.insertBefore(g,s);
  })();
</script>
<!-- End Matomo Code -->
```

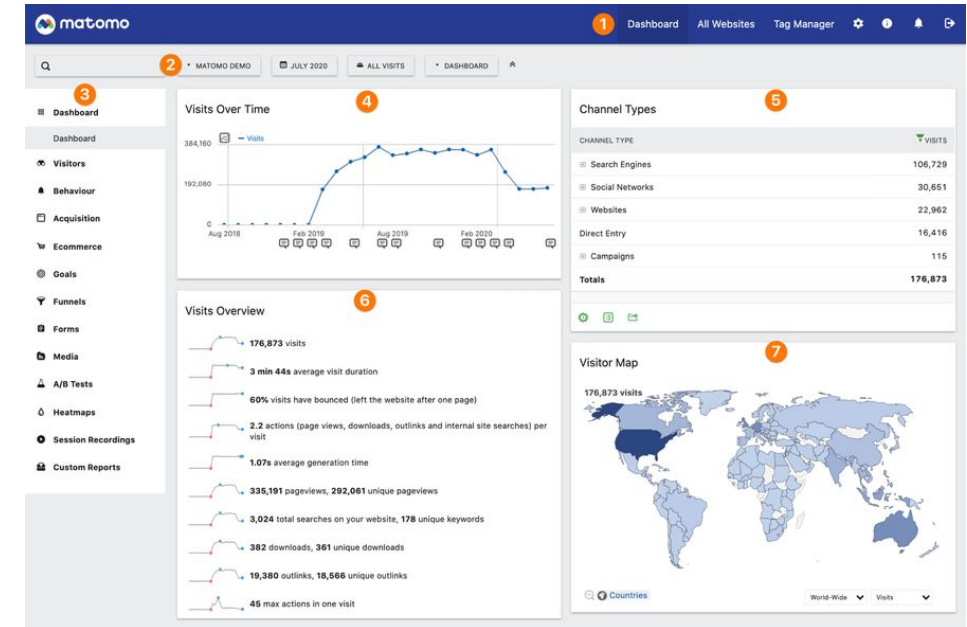
Add site to Matomo

Implement Tracking Code

# View Web Analytics



## Web Services Portal Basic Statistics



## Web Analytics Page Advanced Usage

# Web Content Management

Drupal, Wordpress



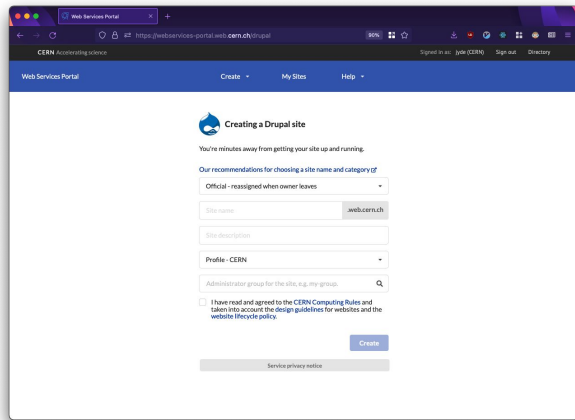
**Dynamic content  
management at CERN**

**Support for complex  
websites and user  
interactions**

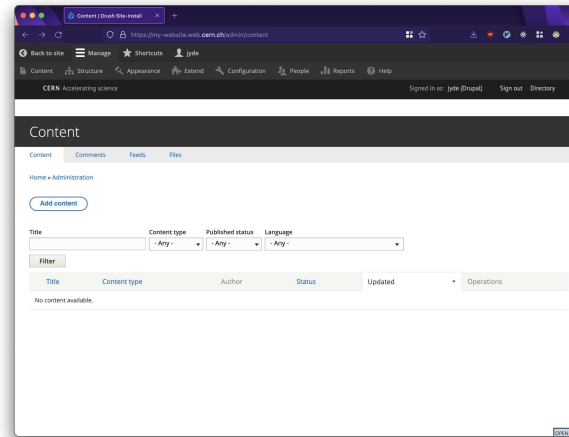
**Open source and  
community support**

# Workflow

## Create Site Web Services Portal





















## Create Content WYSIWYG Editor



## Manage Access Application Portal

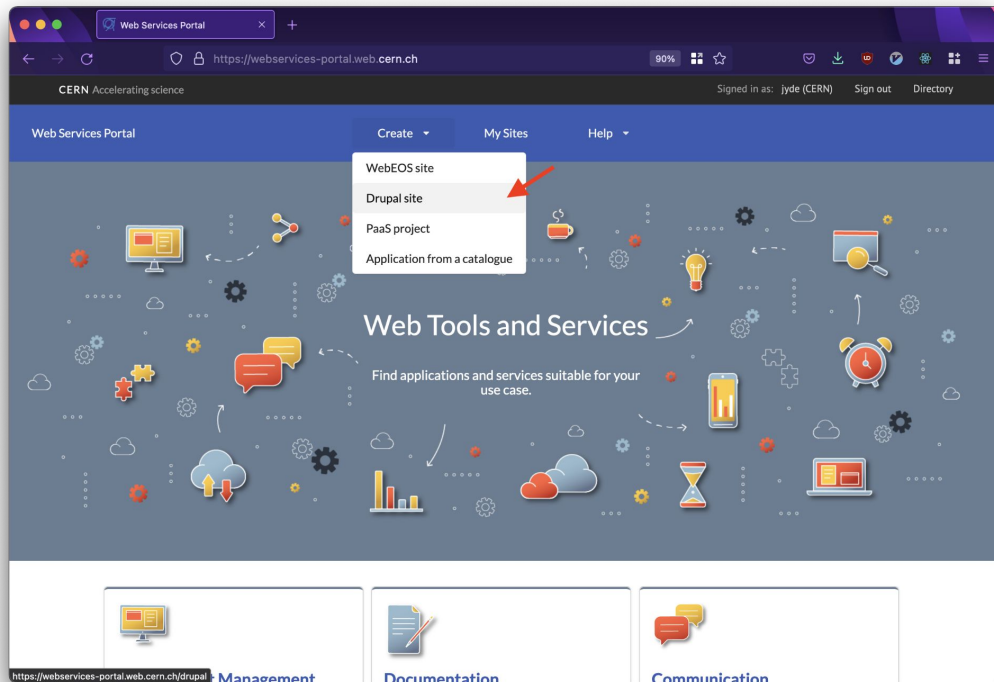
The screenshot shows the 'Roles' management page for the 'Web frameworks My Website (drupal)' application. A red arrow points to the 'Apply to all users?' column. The table lists various roles with their identifiers, descriptions, and management icons.

Name	Role Identifier	Description	Required?	Multifactor?	Apply to all users?
administrator	administrator	Migrated role from SimpleSAML			  
CERN Registered	cern_registered	CERN primary accounts			  
CERN Shared	cern_shared	CERN service accounts			  
HEP Trusted	hep_trusted	Role for HEP Trusted Users			  
Verified External	verified_external	Role for Verified External Users			  
Unverified External	unverified_external	Role for Unverified External Users			  

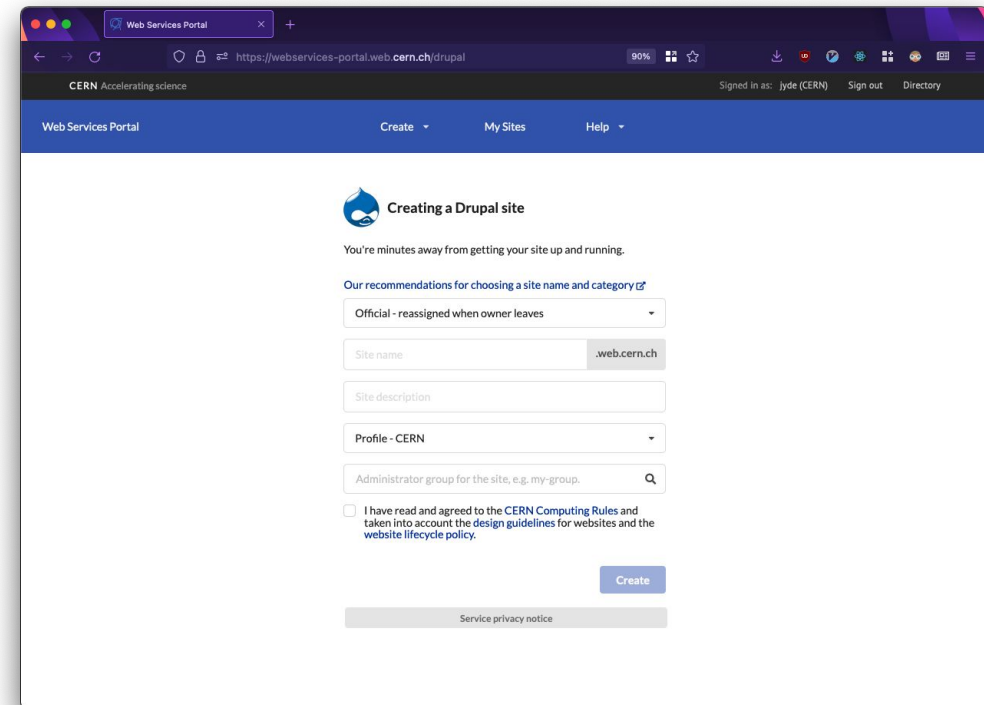
[+ Add Role](#)



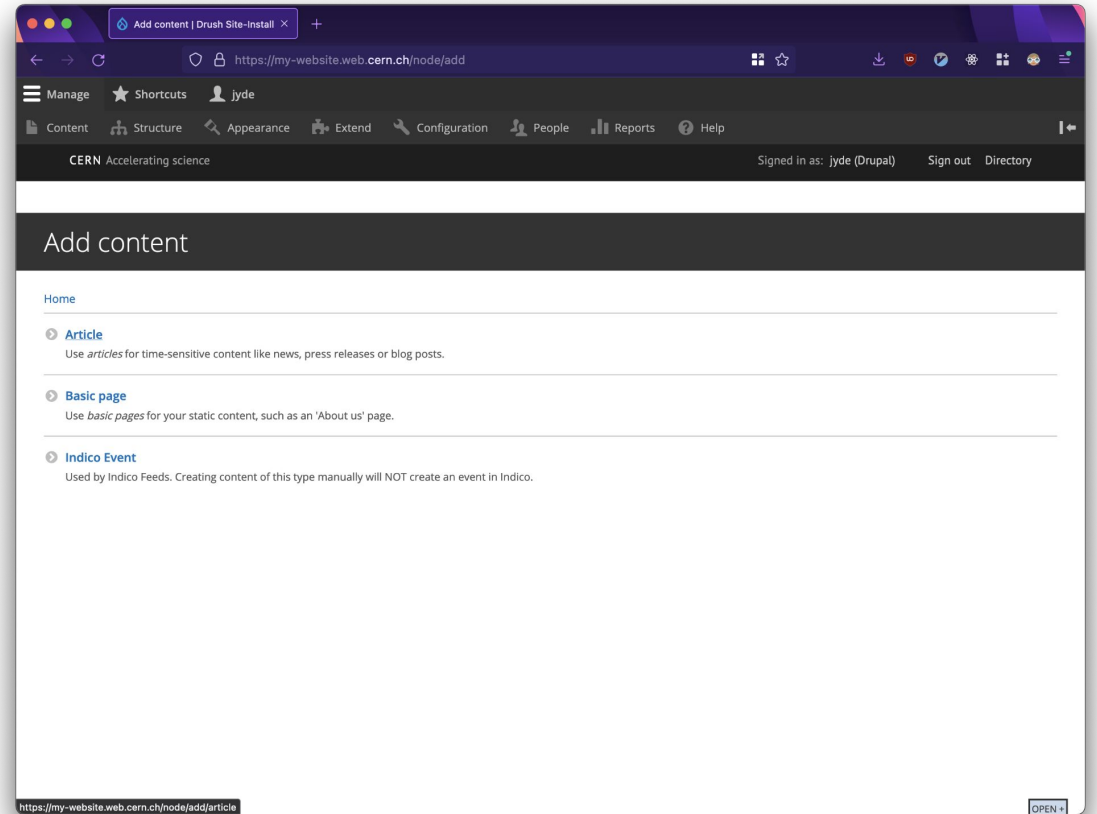
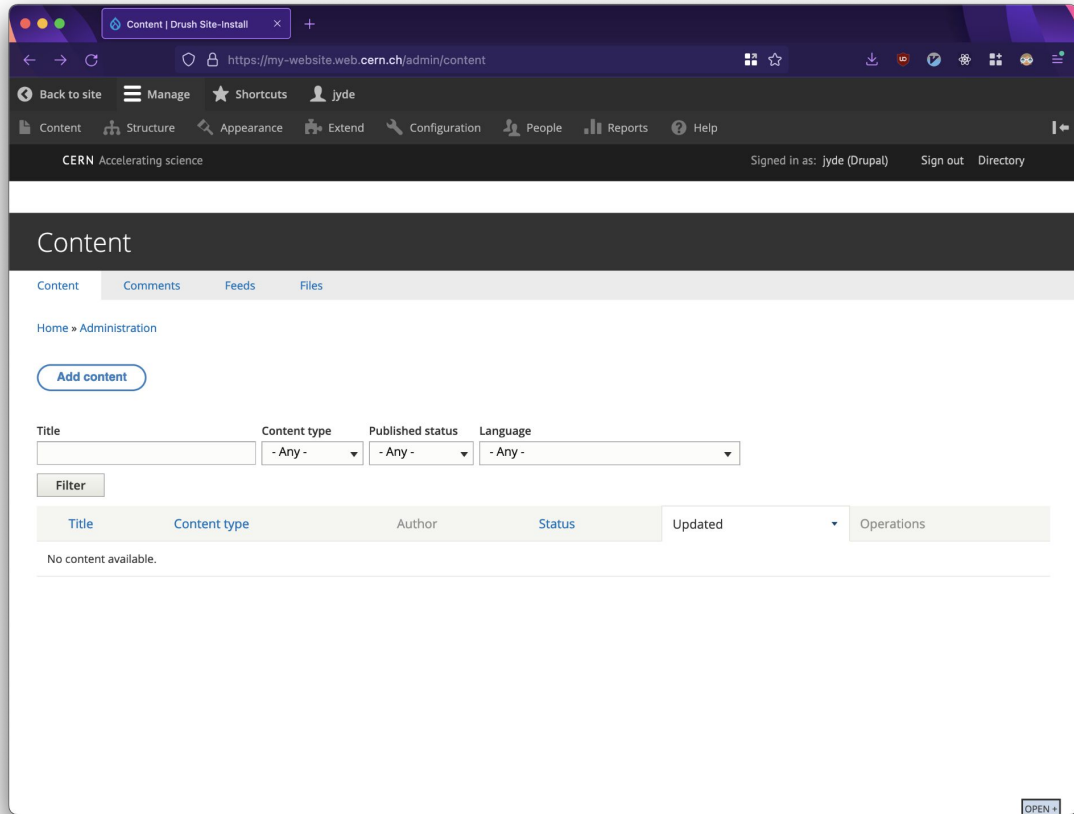
# Create site



# Configure
















# Create content




# Manage Roles

**Application: Web frameworks My Website (drupal)**

Application details   SSO Registration   **Roles**   Group memberships

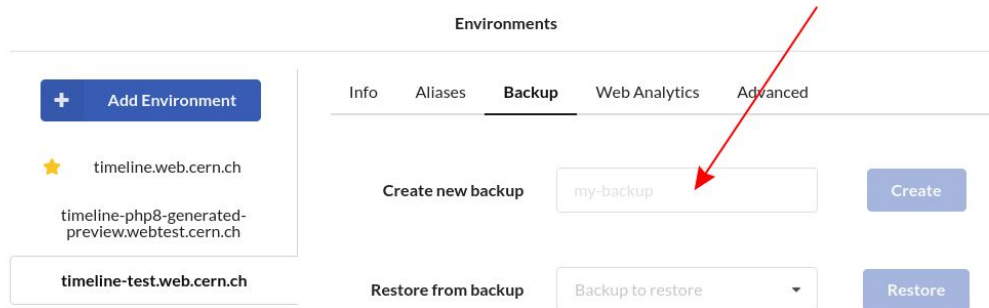
Name	Role Identifier	Description	Required?	Multifactor?	Apply to all users?	
administrator	administrator	Migrated role from SimpleSAML				  
CERN Registered	cern_registered	CERN primary accounts			✓	 
CERN Shared	cern_shared	CERN service accounts			✓	 
HEP Trusted	hep_trusted	Role for HEP Trusted Users			✓	 
Verified External	verified_external	Role for Verified External Users			✓	 
Unverified External	unverified_external	Role for Unverified External Users			✓	 

[+ Add Role](#)

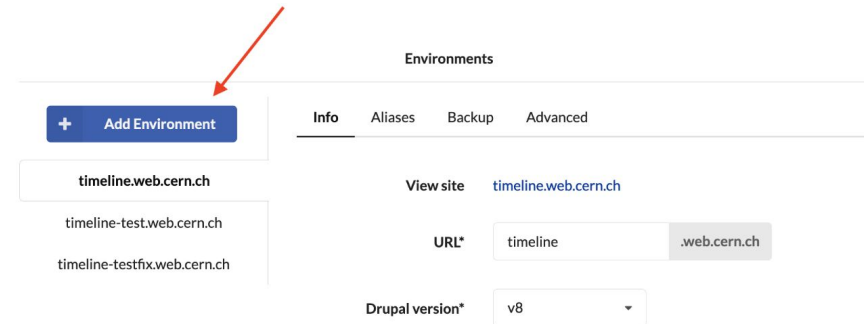


# Additional functionalities

- Automated backups
- On demand backups and restores via the Web Services Portal
- Cloning for testing and development



The screenshot shows the 'Environments' management interface. On the left, a list of environments includes 'timeline-test.web.cern.ch'. The main panel is titled 'Environments' and has tabs for 'Info', 'Aliases', 'Backup', 'Web Analytics', and 'Advanced'. The 'Backup' tab is active. It contains two sections: 'Create new backup' with a text input field containing 'my-backup' and a 'Create' button, and 'Restore from backup' with a dropdown menu showing 'Backup to restore' and a 'Restore' button. A red arrow points to the 'my-backup' input field.



The screenshot shows the 'Environments' management interface with a list of environments on the left: 'timeline.web.cern.ch', 'timeline-test.web.cern.ch', and 'timeline-testfix.web.cern.ch'. A red arrow points to the '+ Add Environment' button. The main panel is titled 'Environments' and has tabs for 'Info', 'Aliases', 'Backup', and 'Advanced'. The 'Info' tab is active. It displays details for the selected environment 'timeline.web.cern.ch', including 'View site' (timeline.web.cern.ch), 'URL\*' (timeline) with a domain dropdown set to '.web.cern.ch', and 'Drupal version\*' (v8).

# A note on Wordpress

- Transition from Drupal to WordPress underway
- Limited customization to ensure uniformity
- Currently requires opening a ticket for new instances
- Integration with CERN's authentication system

# Identifying your use case

# Identifying your use case



## Dynamic Content Management

- Use Drupal or WordPress to manage dynamic content efficiently. These platforms offer:
  - - Easy content creation and editing with WYSIWYG editors.
  - - Categorization and tagging for better content organization.
  - - API integration



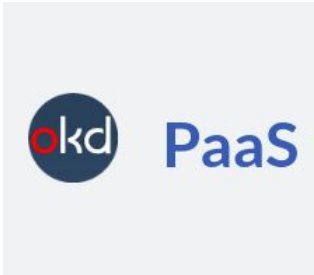
## Simple Content Hosting

- WebEOS is ideal for simple content hosting:
  - - Store content on EOS and manage it via CERNBox.
  - - Serve HTML, CSS, and JavaScript files efficiently.
  - - Ensure content is accessible with minimal maintenance.

# Try it yourself



 <b>Web Content Management</b> Create fully-fledged projects and organizational sites with content management and WYSIWYG editor.	 <b>Documentation</b> Create structured documentation for a service, build your project's knowledge base, work on publications.	 <b>Communication</b> Allow your community to discuss specific topics and get their answers quickly. Prepare surveys, send newsletters and alerts.
 <b>Web Application &amp; Site Hosting</b> Expose your self-made website and share content with others.	 <b>Software development</b> Get support for the whole software lifecycle: issue tracking, version control, continuous integration and deployment, repository management, and others.	 <b>Monitoring Solutions</b> Add analytics to your website, get insight into your application performance and identify operational problems with no hassle.





Thank You!



[home.cern](http://home.cern)